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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/527,326	10/31/2005	Herbert Wolter	060953-0136	2530

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EXAMINER	
HEINCER, LIAM J	

ART UNIT	PAPER NUMBER
1796	

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11/21/2008	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/527,326	WOLTER ET AL.	
	Examiner	Art Unit	
	Liam J. Heincer	1796	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 August 2008*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-29* is/are pending in the application.

4a) Of the above claim(s) *19-28* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-18 and 29* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

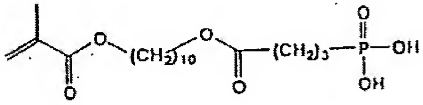
The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-18 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada et al. (WO00/58316) in view of Billington et al. (US Pat. 4,514,342).

Considering Claims 1-6, 9-18, and 29: Okada et al. teaches a compound of the formula



formed by the reaction of an acrylate esterfied polyol and 2-carboxyethylphosphonic acid (Examples 8-1 and 8-2).

Okada et al. does not teach a polyesterified polyol. However, Billington et al. teaches the reaction of a polyhydric alcohol with at least four hydroxyl groups with at least three of the hydroxyl groups esterified with an acrylate (2:62-66 and 3:19-36) and a phosphorous containing compound (2:62-66). Billington et al. also teaches the polyhydric alcohol as being pentaerythritol (3:37-42). Okada et al. and Billington et al. are combinable as they are concerned

with similar technical difficulties, namely the reaction of esterified polyols with phosphorous containing compounds to form dental compositions. It would have been obvious to a person having ordinary skill in the art at the time of invention to have used the polyfunctional polyol of Billington et al. in the preparation of the compound of Okada et al., and the motivation to do so would have been, as Billington et al. suggests, to improve the adhesion of the dental composition (3:46-62).

Okada et al. teaches the carboxyethylphosphonic acid and the monophosponate groups as having similar reactivites (Table 9).

Considering Claims 6 and 7: Okada et al. teaches m as being 1 and n as being 1 (Table 9).

Response to Arguments

Applicant's arguments, see pages 2-5, filed August 27, 2008, with respect to the rejection under 35 U.S.C. 103(a) over Hatakeyama et al. of claims 1-12 have been fully considered and are persuasive. The rejection of claims 1-12 has been withdrawn.

Applicant's arguments filed August 27, 2008 have been fully considered but they are not persuasive, because:

A) Applicants argument that the structure of Okada et al is incorrectly drawn is not persuasive. As m can be both zero or one (claim 1), both the ethylene and propylene bridges would meet the claimed limitations.

B) Applicants argument that Okada et al is concerned with phosphates rather than phosphonates. While most of the disclosure and the claims are directed towards phosphates, Okada et al teaches an example with a phosphonate compound (Examples 8-1 and 8-2). Additionally, the properties of dental compositions made using the phosphonates were substantially the same as those made using other embodiments of Okada et al (Table 12). Therefore, a person having ordinary skill in the art at the time of invention would have equal motivation to use the phosphonate embodiment in dental compositions as they would to use the phosphate embodiment.

C) Applicants argument that a person having ordinary skill in the art at the time of invention would not have had a reasonable expectation of success when reacting the

(meth)acrylic ester of Billington et al. with the 2-carboxyethyl phosphonate of Okada et al is not persuasive. Okada et al teaches that methacrylic esters of polyols will react with both phosphorous oxychloride and with 2-carboxyethyl phosphonate (Examples 4-1 and 8-1). Additionally, Okada et al teaches that monoesters and polyesters of polyols and (meth)acrylic acid are interchangeable in terms of reactivity (12-23-14:20). Therefore, as Billington et al. teaches that their polyol derivatives are reactive with phosphorous oxychloride (Example 1), a person having ordinary skill in the art at the time of invention would have reasonably expected that the compounds of Billington et al. would react with 2-carboxyethyl phosphonate.

D) In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.,* 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). Specifically, the applicant has argued that Okada et al only teaches diols in their examples without addressing the combination of Okada et al and Billington et al., which together teach the use of a polyol. As Okada et al does not preclude the use of compounds with multiple polymerizable double bonds (4:23-45), applicants argument regarding the use of the diol is not in and of itself sufficient to overcome the rejection.

E) In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO

MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Correspondence

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Liam J. Heincer whose telephone number is 571-270-3297. The examiner can normally be reached on Monday thru Friday 7:30 to 5:00 EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Eashoo can be reached on 571-272-1197. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Mark Eashoo/ LJH
Supervisory Patent Examiner, Art Unit 1796 November 17, 2008